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Note e Comunicazioni

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Sepia elegans (Cephalopoda: Sepiidae): a new host record for the parasite *Nybelinia lingualis* (Cestoda: Tentaculariidae)

Abstract - A plerocercoid larva of the trypanorhynch cestode *Nybelinia lingualis* was discovered inside the mantle cavity of a cuttlefish *Sepia elegans*. The cuttlefish had been found in the stomach contents of a blue shark, *Prionace glauca*, caught in the southern Adriatic Sea. This is the first record of *N. lingualis* in the cuttlefish *S. elegans*.

Key-words: Cephalopoda, Cestoda, Chondrichthyes, parasitism, Adriatic Sea.

Riassunto - Prima segnalazione del parassita *Nybelinia lingualis* (Cestoda: Tentaculariidae) in *Sepia elegans* (Cephalopoda: Sepiidae).

Nella cavità del mantello di una seppia della specie *Sepia elegans*, a sua volta rinvenuta nel contenuto gastrico di una verdesca, *Prionace glauca*, pescata nell'Adriatico meridionale, è stata trovata una larva plerocercoide del cestode tripanorinco *Nybelinia lingualis*. Questo è il primo ritrovamento del parassita in *S. elegans*. *Nybelinia lingualis* è una delle due specie del genere presenti nel Mediterraneo e l'unica nei mari italiani. Essa è il tripanorinco più di frequente rinvenuto, allo stadio di plerocercoide, in cefalopodi, tanto litorali che profondi, sia bentonici che pelagici.

Parole chiave: Cephalopoda, Cestoda, Chondrichthyes, parassitismo, Mare Adriatico.

Introduction

In the life cycle of trypanorhynch cestodes, chondrichthyan fishes represent the definitive hosts, whereas bony fishes and cephalopods – the latter less frequently – act as intermediate hosts (Yamaguti, 1959). According to Hochberg (1990) cephalopods function as transport or reservoir hosts between small teleosts and chondrichthyans.

Purpose of the present note is to report the occurrence of a plerocercoid larva of *Nybelinia lingualis* (Cuvier, 1817) (Cestoda: Trypanorhyncha: Tentaculariidae) in a specimen of *Sepia elegans* de Blainville, 1827 (Cephalopoda: Sepiidae), which in turn was found in the stomach contents of a blue shark, *Prionace glauca* (Linnaeus, 1758) (Chondrichthyes: Carcharhinidae), caught in the southern

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Adriatic Sea. Cephalopods are known to harbour several tentaculariid species (Palm *et al.,* 1997).

This occurrrence of *N. lingualis* in *S. elegans* represents a new host record.

Material and methods

The blue shark was caught by drifting longline set for swordfish in the southern Adriatic Sea, on the 20 September 1993. The shark was a subadult female, 67 cm in total length (*legit* Irene Bianchi). Its stomach contained a semi-digested cuttlefish *S. elegans*; in addition, it contained beaks of three specimens of *Histioteuthis reversa* (Verrill, 1880) (Cephalopoda: Histioteuthidae) and two bony fish lenses (Clò, 1996). The cuttlefish lacked its cuttlebone, which had been most probably dissolved by digestion. Its size was not measurable because of its digested conditions; however it was within the range of adult specimens.

Inside the cuttlefish mantle cavity, a plerocercoid larva was found in a hollow of the mantle inner wall; such a small depression probably represented the former site of the plerocercoid. The parasite larva was preserved in 75% ethanol. It was consigned to Dr. F.G. Hochberg (Santa Barbara Museum of Natural History, Santa Barbara, California, USA).

The plerocercoid was identified using the keys by Yamaguti (1959) and Schmidt (1986), and the descriptions and drawings in Dollfus (1930), Hochberg (1990), and Palm & Walter (2000).

Results

The plerocercoid bore four separate bothridia and four tentacles with solid hooks; the *pars bothridialis* overlapped most of the *pars vaginalis*. These characters identify the cestode as beloging to the family Tentaculariidae. This taxon comprises the genera *Tentacularia* Bosc, 1797, *Nybelinia* Poche, 1926, *Heteronybelinia* Palm, 1999, *Mixonybelinia* Palm, 1999, *Kotorella* Euzet & Radujkovic, 1989, and *Kotorelliella* Palm & Beveridge, 2002. *Nybelinia* is characterised by a short scolex, prominent bothridia with free borders, and the *pars bulbosa* not overlapping entirely the *pars bothridialis*; all of these features were present in the examined plerocercoid larva. Lastly, the shape of the hooks and their distribution on the tentacles correspond to the species *N. lingualis*.

Discussion

This cosmopolitan species is one of the few trypanorhynch cestodes known to infect cephalopods, which act as intermediate hosts; indeed, it is the trypanorhynch most commonly encountered in them (Hochberg, 1990). Larval stages of *N. lingualis* have been reported in several cephalopods: *Loligo vulgaris* Lamarck 1798, *Ommastrephes bartramii* (Lesueur, 1821), *Sthenoteuthis oualaniensis* (Lesson, 1830), *Sthenoteuthis pteropus* (Steenstrup, 1855), *Octopus vulgaris* Cuvier, 1797, *Eledone moschata* (Lamarck, 1798), *Eledone cirrhosa* (Lamarck, 1798), and the cuttlefish *Sepia officinalis* Linnaeus, 1758 (Dollfus, 1958; Bates, 1990; Hochberg,

1990) (*Eledone aldrovandi* (Rafinesque, 1914), reported by Dollfus [1942] and Bates [1990], is indeed a junior synonym of *E. cirrhosa*). Hence this parasite is quite ubiquitous and is hosted by littoral as well as deep-sea cephalopods, both benthic and oceanic (for the preferred habitat of these cephalopods, see Roper *et al.*, 1984).

According to Palm & Walter (2000) *N. lingualis* is one of the two species of the genus recorded in the Mediterranean (the other one is *Nybelinia africana* Dollfus, 1960); it is the only one found in Italian waters (Bona *et al.*, 1995). The latter authors do not list *N. lingualis* in the Adriatic Sea; but indeed Dollfus (1942, 1958) and Hochberg (1990) report several cases of *N. lingualis* larvae occurrence in cephalopods collected in the Adriatic Sea.

A previous occurrence of *N. lingualis* in *P. glauca* – a specimen from Trieste, northern Adriatic Sea – is cited in Dollfus (1942). The present record of *N. lingualis*, in a specimen of *S. elegans* preyed upon by a blue shark, in addition to representing a new host record, indicates one of the possible pathways followed by this trypanorhynch to reach the shark, its definitive host. Thus, the present finding is suggestive of the coincidence of the host-chain with the food-chain.

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